REMARKS/ARGUMENTS

Claim Objections

Claims 5, 7-10, 13, 15, 20-25, 27, and 29 are objected to because of informalities.

Applicant amended claims 1-29 to improve clarity. The amended claims are believed to be free of any of the informalities identified by the Examiner.

Claim Rejections – 35 U.S.C. § 112

Claims 3-5, 8-10, 12-15, 18-20, and 23-29 are rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant notes that the term "WaveKey" has been replaced by the formal term "optical signature". As indicated in paragraph 27 of the present applicant, the two terms are synonymous.

Amended independent claims 1 and 16 provide a clear antecedent basis for the term "light path". References to an "existing light path", a "potential light path, or a "light path to be monitored" are eliminated in the amended claims 1-29.

In amended claim 13, the term "the list of all optical nodes in the OCN" is replaced by "a list of all optical nodes in said plurality of optical nodes" which has proper antecedent basis in amended claim 1. The term "the CN (Control Network) topology information" is replaced by "the Control Network" which is defined in the preamble of amended claim 1.

In amended claim 15, the term "the CN (Control Network) topology information" is replaced by "topology information maintained by the Control Network", thus associating topology information with the Control Network introduced in claim 1.

Claim Rejections – 35 U.S.C. § 103

Claims 1-3, 6, 12, 14, 16-18, 21, 26, and 28 are rejected under 35 U.S.C. § 103 as being unpatentable over Rajagopal et al. (U.S. Patent No. 7,120,118).

Applicant respectfully notes that the Rajagopal reference discloses a method and means for determining alternate paths between a source node and a sink node while the present application discloses a method and a system for monitoring a single light path from a source optical node to a sink optical node for fault detection. The light path is uniquely defined by an optical signature that is detectable in the optical domain without resorting to costly optical-electrical-optical conversion.

As stated in the abstract in Rajagopal, "Current paths through the connecting network are identified and used to build detour paths through the connecting network using traffic management nodes as detour nodes". Claim 1 in Rajagopal describes a method comprising identifying a current path, identifying a detour path, and converting the detour path into an alternate path. Claim 9 in Rajagopal describes a method comprising identifying current paths, combining the current paths to derive alternate paths, and selecting one of the alternate paths. Claim 17 in Rajagopal describes a network comprising means for identifying current paths, means for combining the current paths to derive alternate paths, etc.

This is in sharp contrast to the method and system of the present invention which strives to detect misrouting of light paths for the purpose of correcting a misrouted light path by displaying all relevant information to a network administrator through a Command Line Interface (CLI).

The Examiner equates the procedure described in col. 4, lines 29-43 in the Rajagopal reference with the procedure for tracing a light path cited in claim 1 of the present application. To clarify the difference between the two procedures, Applicant amended claim 1 to include:

> "modulating a wavelength with an optical signature detectable in the optical domain, the optical signature defining said light path;
>
> executing a first procedure for identifying a first sequence of optical nodes currently

receiving said optical signature;"

The method of Rajagopal relies on IP-based route-tracing protocols while the method and system of the present invention rely on optical signature certification of wavelength channels. As stated in paragraph [0004] of the present application (page 2, lines 9-15):

"Most of the prior art, including the above-mentioned patent application, concerns tracing of routes at the IP level and does not address optical light path tracing. Some of these capabilities are available from Network Management Systems (NMS). Use of a commercial off-the-shelf NMS requires the OCN to be compatible with the NMS product. Moreover, it may not be possible to provide a network management port at each node in the OCN because of the increase in cost."

Regarding claim 12 (page 6 of the office action), the Examiner equates the step of "flooding the OCN" with the process of initialization of the multi-path data structure performed in block 500 of FIG. 5A which is further detailed in FIG. 5B in Rajagopal. The initialization begins at block 502, in which current paths through the network are identified for traffic sent among the TMNs (traffic management nodes).

In the present application, the step of "flooding the OCN" polls the optical nodes in the optical communication network asking each optical node whether it observed a specific optical signature (also called wavekey). Please see paragraph [0036], page 14, lines 19-22: *"The procedure then sends an enquiry message to each of the nodes detected in step 604 asking whether the nodes have observed or detected the wavekey corresponding to the light path of interest."* The limitation of "flooding the OCN" is now included in amended claim 1: "executing a third procedure based on flooding of enquiry messages for identifying each optical node in said plurality of optical nodes that detects said optical signature;".

Claims 4-5, 7-11, 13, 15, 19-20, 22-25, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rajagopal in view of Sengupta *et al.*

Reference is made to Figure 3 and pages 50-51 in Sengupta.

Applicant respectfully notes that Figure 3 in Sengupta illustrates light-path establishment using Constraint-based Label Distribution Protocol (CR-LDP) which is one of the protocols of the Multi-Protocol Label Switching (MPLS) system. The description in pages 50-51 of Sengupta also relates to the MPLS suite of protocols.

SUMMARY

Claims 1-29 have been amended to address the deficiencies identified by the Examiner. No new matter has been added by way of the above amendments.

In view of the foregoing, early favorable consideration of the application is earnestly solicited.

Respectfully submitted,

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